Appendix A CEQA Checklist

Supporting documentation for all California Environmental Quality Act (CEQA) checklist determinations is provided in Chapter 2 of this Initial Study/Environmental Assessment (IS/EA). Documentation of "No Impact" determinations is provided at the beginning of Chapter 2. Discussions of all impacts and avoidance, minimization, and/or mitigation measures are under the appropriate topic headings in Chapter 2.

CEQA Environmental Checklist

12-ORA-55	**6.4/10.3**	**EA 0J3400/EFIS 1200020328**
Dist.-Co.-Rte.	P.M/P.M.	E.A.

This checklist identifies physical, biological, social and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects indicate no impacts. A NO IMPACT answer in the last column reflects this determination. Where there is a need for clarifying discussion, the discussion is included either following the applicable section of the checklist or is within the body of the environmental document itself. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

	Potentially Significant Impact	**Less Than Significant with Mitigation**	**Less Than Significant Impact**	**No Impact**
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐
II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒
III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐
IV. BIOLOGICAL RESOURCES: Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☒	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐

		Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f)	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒
V. CULTURAL RESOURCES: Would the project:					
a)	Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☒	☐
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐
c)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
d)	Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐
VI. GEOLOGY AND SOILS: Would the project:					
a)	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☐	☒
	ii) Strong seismic ground shaking?	☐	☐	☒	☐
	iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
	iv) Landslides?	☐	☐	☐	☒
b)	Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c)	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

VII. GREENHOUSE GAS EMISSIONS: Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	An assessment of the greenhouse gas emissions and climate change is included in the body of the environmental document. While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the body of the environmental document.

VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☒	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐

		Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
h)	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒
IX. HYDROLOGY AND WATER QUALITY: Would the project:					
a)	Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e)	Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f)	Otherwise substantially degrade water quality?	☐	☐	☒	☐
g)	Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h)	Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☒	☐
i)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒	☐
j)	Inundation by seiche, tsunami, or mudflow	☐	☐	☐	☒
X. LAND USE AND PLANNING: Would the project:					
a)	Physically divide an established community?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒
XI. MINERAL RESOURCES: Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒
XII. NOISE: Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
XIII. POPULATION AND HOUSING: Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

		Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c)	Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
XIV. PUBLIC SERVICES:					
a)	Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
	i. Fire protection?	☐	☐	☒	☐
	ii. Police protection?	☐	☐	☒	☐
	iii. Schools?	☐	☐	☒	☐
	iv. Parks?	☐	☐	☒	☐
	v. Other public facilities?	☐	☐	☒	☐
XV. RECREATION:					
a)	Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b)	Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒
XVI. TRANSPORTATION/TRAFFIC: Would the project:					
a)	Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b)	Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☒	☐	☐
c)	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒

		Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d)	Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
e)	Result in inadequate emergency access?	☐	☐	☒	☐
f)	Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐
XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:					
a)	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
b)	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c)	Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d)	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e)	Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
f)	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g)	Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE					
a)	Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐

		Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
b)	Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c)	Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

I. AESTHETICS

The potential for the Build Alternatives to result in adverse impacts related to aesthetics was assessed in the *Visual Impact Assessment* (2015) and Section 2.6, Visual/Aesthetics, in this IS/EA. The following discussions are based on those analyses.

a) Less Than Significant Impact. The study area viewshed includes distant views of the San Bernardino Mountains to the north and the Santa Ana Mountains to the east. However, the Build Alternatives would not affect either of those distant scenic views, impact views to those areas from the State Route (SR-55) corridor, or result in the loss of any scenic resources in the area. Therefore, the Build Alternatives would not result in adverse impacts related to scenic vistas. No mitigation is required.

b) No Impact. SR-55 is not a State-designated Scenic Highway, and there are no State-designated Scenic Highways crossing or in the vicinity of the project segment of SR-55. Views along the SR-55 corridor include distant views of the San Bernardino Mountains to the north and the Santa Ana Mountains to the east. The Build Alternatives would not affect either of those distant views and would not impact views to those areas from the SR-55 corridor. Therefore, the Build Alternatives would not result in adverse impacts related to scenic highways or resources. No mitigation is required.

c) Less Than Significant Impact. The construction of the Build Alternatives would result in temporary visual changes as a result of truck hauling, excavation activity, removal of vegetation, grading, detour signage, other construction activities, and views of construction equipment, staging areas, temporary construction easements (TCEs), and materials. However, after construction is completed, these temporary impacts would no longer occur. Areas identified for revegetation would be revegetated at the completion of construction. Because construction impacts are temporary and disturbed areas would be revegetated on completion of construction, no permanent change in visual character and/or quality would occur. Therefore, the potential visual impacts during construction and operation of the Build Alternatives would not be adverse. Implementation of Measures V-1 and V-2, provided in Section 2.6, would minimize visual impacts during construction and operation of the project.

d) Less Than Significant Impact. Existing light sources in the study area include traffic, street lighting, and lighted parking lots; signalization at intersections and freeway on- and off-ramps; commercial/industrial/business park areas; and limited

light sources from residential areas. Some existing light fixtures within the freeway right-of-way along the project segment of SR-55 would be relocated as part of the Build Alternatives. The relocated light fixtures would be designed and installed consistent with existing California Department of Transportation (Caltrans) standards. The relocated light fixtures would be similar in location, function, and light intensity as the existing lighting. As a result, the changes in light fixtures under the Build Alternatives would not result in impacts related to lighting, and no mitigation is required.

Existing sources of glare in the SR-55 corridor consist mostly of reflective surfaces from vehicles traveling along SR-55. Other sources include reflective surfaces of wet pavement and on adjacent buildings. The Build Alternatives would introduce a new source of glare through the addition of new travel lanes; however, these would be the same as the existing sources of glare on SR-55. As a result, the Build Alternatives would not result in adverse impacts related to glare, and no mitigation is required.

II. AGRICULTURE AND FOREST RESOURCES

As discussed in the introduction to Chapter 2, Affected Environment, Environmental Consequences, and Avoidance, Minimization, and Mitigation Measures, and in the *Community Impact Assessment* (CIA 2015), there is a parcel of land immediately west of the SR-55/Interstate 405 (I-405) interchange that has been and continues to be used for agricultural uses. That parcel is designated as Farmland of Statewide Importance by the California Department of Conservation Farmland Mapping and Monitoring Program and is shown on the City of Costa Mesa General Plan Land Use Map (City of Costa Mesa, July 2004) as Urban Center Commercial.

With the exception of the parcel described above, there are no farmlands, agricultural resources, forest lands, or timberlands within or immediately adjacent to the disturbance limits of the Build Alternatives. There are no Williamson Act contracts applicable to the parcel of land described above or elsewhere along the project segment of SR-55.

a), b), and e) No Impact. The Build Alternatives would not result in the use of any land from the parcel designated as Farmland of Statewide Importance in the City of Costa Mesa and, therefore, would not convert any land to a nonagricultural use, conflict with zoning or a Williamson Act contract, or result in the conversion of other agricultural land to non-agricultural uses. No mitigation is required.

c) and d) No Impact. There are no designated timber or forest lands or existing timber or forest uses along the project segment of SR-55. As a result, the Build Alternatives would not conflict with zoning or result in a change in zoning on forest lands, the loss of forest land, or the conversion of forest land to non-forest land uses. No mitigation is required.

III. AIR QUALITY

The potential for the Build Alternatives to adversely impact air quality was assessed in the *Air Quality Assessment Report* (2015) and Section 2.13, Air Quality, in this IS/EA. The following discussion is based on those analyses.

a) No Impact. The Build Alternatives are included in the approved 2012 financially constrained Regional Transportation Plan (RTP) and the 2015 Federal Transportation Improvement Program (FTIP) and would not conflict with or obstruct the implementation of any applicable air quality plan (AQMP). No mitigation is required.

b) Less Than Significant Impact. SR-55 is in an attainment/maintenance area for carbon monoxide (CO). Using the Caltrans Transportation Project-Level Carbon Monoxide Protocol, a CO screening analysis was conducted. That analysis determined the Build Alternatives would not result in any CO concentrations that would exceed the 1-hour or 8-hour CO standards. No mitigation is required.

The project segment of SR-55 is in a nonattainment area for the federal standards for particulate matter less than 2.5 microns and 10 microns in size ($PM_{2.5}$ and PM_{10}, respectively). Based on a PM hot-spot analysis, it is not expected that changes to $PM_{2.5}$ and PM_{10} emissions levels associated with the Build Alternatives would result in new violations of the federal ambient air quality standards (AAQSs) for the following reasons:

- Based on the projected $PM_{2.5}$ concentrations in the 2007 AQMP, without the proposed project, 24-hour $PM_{2.5}$ concentrations in the project area would be reduced to 14 percent below the federal AAQS by 2015.
- Based on the projected $PM_{2.5}$ concentrations in the 2007 AQMP, without the proposed project, the annual average $PM_{2.5}$ concentrations in the project area would be reduced to 18 percent below the federal AAQS by 2014.
- With the exception of 2007, the ambient PM_{10} concentrations have not exceeded the 24-hour or annual federal AAQS.

- Based on the projected PM_{10} concentrations in the 2007 AQMP, without the proposed project, the 24-hour PM_{10} concentrations would be 55 percent below the federal AAQS by 2015.
- When compared to the No Build conditions, the largest increase in regional $PM_{2.5}$ and PM_{10} emissions is 1.00 percent.

As a result, future new or worsened $PM_{2.5}$ and PM_{10} violations of any AAQS are not anticipated. Therefore, the project meets the conformity hot-spot requirements in 40 Code of Federal Regulations (CFR) 93-116 and 93-123 for $PM_{2.5}$ and PM_{10}. The estimated peak-day construction emissions by construction phase and total construction emissions for Alternative 3 were shown in Tables 2.13.4 and 2.13.5 in Section 2.13 in the IS/EA. Because Alternative 3 would result in the largest disturbed area, at 77.2 acres (ac), the construction-related emissions were calculated for that alternative. Alternatives 1, 2, and 4 would result in slightly lower construction-related emissions because they would result in smaller disturbed areas. Compliance with South Coast Air Quality Management District (SCAQMD) Rule 403 (refer to Measure AQ-1) and Measures AQ-2 through AQ-5 (provided in Section 2.13) during construction would avoid and/or minimize construction-related air quality impacts from fugitive dust emissions and construction equipment emissions.

A quantitative mobile source air toxics (MSAT) emissions analysis was conducted. As shown in Table 2.13.11 in the IS/EA, the analysis indicates a substantial decrease in MSAT emissions can be expected between the existing (2011) condition and the future (2020 and 2040) No Build Alternative. This is consistent with a United States Environmental Protection Agency (EPA) study that projects a substantial reduction in on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde between 2000 and 2050. Based on the analysis for this project, reductions in MSATs expected by 2040 are: 64 percent of diesel particulate matter (diesel PM), 66 percent of benzene, 77 percent of 1,3-butadiene, 77 percent of acrolein, and 69 percent of formaldehyde. These projected reductions are achieved while total vehicle miles traveled increase by 5.5 percent between 2011 and 2040 for the No Build Alternative. As shown in Table 2.13.11, the Build Alternatives would result in a negligible change in MSAT. As a result, while the Build Alternatives would result in a negligible increase in localized MSAT emissions, the EPA vehicle and fuel regulations, coupled with fleet turnover, would result in substantial reductions in MSAT over time that would result in regionwide MSAT levels substantially lower than they are today. No mitigation is required.

c) Less Than Significant Impact. The Build Alternatives would not result in concentrations exceeding the 1-hour or 8-hour CO standards and would not delay the attainment of the $PM_{2.5}$ or PM_{10} AAQS in the South Coast Air Basin. No mitigation is required.

d) Less Than Significant Impact. As shown in Table 2.13.2 in Section 2.13 in the IS/EA, the sensitive receptors in the vicinity of the project segment of SR-55 are residential and hotel uses. The Build Alternatives may result in temporary, short-term construction-related increases in pollutant concentrations associated with construction equipment emissions and fugitive dust. However, implementation of Measures AQ-1 through AQ-5 provided in Section 2.13 would minimize those potential short-term air quality impacts on sensitive receptors.

The operation of the Build Alternatives would not result in adverse impacts related to CO, $PM_{2.5}$, and PM_{10}. No mitigation is required.

e) Less Than Significant Impact. The Build Alternatives may result in temporary, short-term construction-related objectionable odors from sources such as equipment emissions and asphalt paving. Measures AQ-1 through AQ-5 would minimize those potential short-term odor impacts.

IV. BIOLOGICAL RESOURCES

The potential for the Build Alternatives to result in adverse impacts to biological resources was assessed in the *Natural Environment Study (Minimal Impacts)* (NES(MI)), 2015), the *Jurisdictional Delineation* (2014), and Sections 2.15, Wetlands and Other Waters; 2.16, Plant Species; 2.17, Animal Species; and 2.18, Invasive Species, in this IS/EA. The following discussions are based on those analyses.

a) Less than Significant Impact. The biological study area (BSA) is highly disturbed and does not contain high quality suitable habitat for many special-status species; however, there is marginally suitable habitat for burrowing owl at the southernmost field at Del Amo Avenue. In addition, no owls or owl signs (burrows, scat, tracks, or feathers) were observed during the field surveys. Therefore, the probability of burrowing owls occurring on the southernmost field at Del Amo Avenue is low. Nevertheless, burrowing owls may move onto this site prior to construction. The Build Alternatives may use the southernmost field at Del Amo Avenue as a staging area for equipment during construction. Alternatives 3 and 4

would require a temporary construction easement (TCE) on a portion of the parcel that includes that field. Therefore, if any burrowing owls are present on the site, the Build Alternatives would temporarily impact those owls during construction. The temporary impacts could include removal of burrows and, potentially, the need to relocate owls away from areas proposed for staging and TCEs. Compliance with Measure AS-1, provided in Section 2.17, would avoid and/or minimize any potential impacts to burrowing owls during construction. No mitigation is required.

In addition, special-status bridge/culvert and crevice-dwelling wildlife species have the potential to occur within the BSA. The majority of suitable bat roosting habitat in the BSA was observed in expansion joints within culverts along the various channels, particularly around the I-405/SR-55 interchange, along Lane Channel, and at the Santa Ana/Santa Fe Channel (adjacent to the South Tustin Overhead). Small numbers of roosting myotis bats (likely *Yuma myotis*) were observed in some of the expansion joints, and there is potential for maternity roosting in these structures due to the availability of crevice habitat in close proximity to high-quality foraging habitat. In addition, mature palm trees with untrimmed fronds that were observed throughout the right-of-way may provide roosting habitat for western yellow bat, a California Department of Fish and Wildlife (CDFW) Species of Special Concern that roosts in the dead fronds of palm trees.

Construction activities of the Build Alternatives could impact bats and other bridge- and crevice-nesting special-status species directly as a result of disturbances to weep holes and crevice habitat, and through modifications to culverts and other drainage structures. In addition, construction of the Build Alternatives could also impact tree-roosting habitat for bats through the removal of palm trees or their fronds within the BSA. Compliance with Measures AS-4 and AS-5, provided in Section 2.17, would avoid and/or minimize potential impacts to special-status bat species. No mitigation is required.

b) and c) Less Than Significant Impact. The Build Alternatives would impact United States Army Corps of Engineers (USACE) jurisdictional and nonjurisdictional areas and CDFW jurisdictional areas. The Build Alternatives would temporarily remove 1.01 ac of nonwetland waters subject to USACE jurisdiction as a result of the realignment and reconfiguration of Lane Channel (Drainage E) between Dyer Road and MacArthur Boulevard. As a result of the reconfiguration of Lane Channel, the new channel would enlarge the potential USACE jurisdiction to 1.53 ac within the BSA. Therefore, there would be a 0.52 ac net increase in the area subject to USACE

jurisdiction. The Build Alternatives would not result in permanent impacts to USACE jurisdictional areas or temporary impacts to USACE nonjurisdictional areas. Alternatives 1 and 2 would result in approximately 0.01 ac of permanent impacts, and Alternatives 3 and 4 would result in approximately 0.02 ac of permanent impacts to USACE nonjurisdictional areas as a result of the modifications to Lane Channel.

The impacts to waters under the jurisdiction of the Regional Water Quality Control Board (RWQCB) would be the same as described above for the USACE.

The Build Alternatives would temporarily remove 1.01 ac of nonwetland waters subject to CDFW jurisdiction as a result of the realignment and reconfiguration of Lane Channel. As described for the USACE jurisdiction above, CDFW jurisdiction within the new channel would be the same as the USACE jurisdiction, 1.53 ac. Therefore, there would be a net decrease of 0.93 ac of area subject to CDFW jurisdiction associated with Drainage E (Lane Channel). The Build Alternatives would result in 0.93 ac of permanent impacts to nonwetland water subject to CDFW jurisdiction as a result of the modifications to Lane Channel. The Build Alternatives would not result in temporary impacts to CDFW nonjurisdictional areas. The Build Alternatives would result in 0.04 ac of permanent impacts to CDFW nonjurisdictional areas associated with Drainage F as a result of the realignment of the eastbound East Dyer Road on-ramp to northbound SR-55 and the undergrounding of the existing portion of Drainage F that is located south of the on-ramp.

The *San Diego Creek Watershed Special Area Management Plan* (SAMP, 2012) identified restoration priorities and compensatory mitigation areas in the San Diego Creek Watershed as Aquatic Resource Integrity Areas. Because the Build Alternatives would not result in any impacts to any Aquatic Resource Integrity Areas, the potential project impacts on waters are subject to an abbreviated alternative permitting process associated with the SAMP. If the project is found to be consistent with the San Diego Creek Watershed SAMP by the resource agencies, a Letter of Permission (LOP)/Watershed Streambed Alteration Agreement (WSAA) would be issued to authorize the discharge of dredged and/or fill materials into waters of the U.S. and waters of the State, respectively. If the project is found not to be consistent with the San Diego Creek Watershed SAMP, an Individual Permit from the USACE and a standard Streambed Alteration Agreement (SAA) from the CDFW would be required.

While specific compensatory mitigation is not expected to be required by the resource agencies for the proposed project, measures are expected to be required as conditions of the LOP/WSAA. "Proposed General Conditions for the San Diego Creek Watershed Letter of Permission" included in the SAMP list specific conditions that may be included in a LOP for a project. A summary of those conditions was provided in Table 2.15.5 in Section 2.15. Although these conditions have not yet been approved, it is likely some or all of these would be conditions of the LOP/WSAA for any of the Build Alternatives. If compensatory mitigation is ultimately required by the resource agencies for the project impacts on waters, that mitigation would be determined in coordination with the regulatory agencies based on the quality and quantity of jurisdictional resources affected by the project. If required, compensatory mitigation would be provided through the Measure M2 Freeway Transportation Mitigation Program. In addition, Measures WET-1 through WET-3 would minimize potential impacts to areas under USACE and CDFW jurisdiction. No mitigation is required.

d) Less than Significant Impact. The Build Alternatives would not interfere with the movement of any native resident or migratory fish or impede the use of native wildlife nursery sites. As discussed in the NES(MI), during the site visits for the bat habitat suitability assessment, a coyote was observed in Lane Channel, and additional (tracks and scat) suggest that coyotes use the channel. However, coyotes are adapted to urban areas and are increasingly present in urban drainage channels such as Lane Channel. Although coyotes are evidently present in Lane Channel, the overall project site does not appear to function as a wildlife movement corridor. Therefore, the Build Alternatives would not affect wildlife movement corridors or interfere with established native resident migratory wildlife corridors.

The BSA may contain potentially suitable habitat for migratory birds protected under the Migratory Bird and Treaty Act (MBTA) and the California Fish and Game Code. These species may nest in trees or within bridges and crevices. Construction of the Build Alternatives could impact nesting birds either directly as a result of the removal of trees occupied by nesting birds or disturbances to bridge and crevice habitat, or indirectly as a result of disturbances near trees occupied by nesting birds. Compliance with Measures AS-2, AS-3, and AS-6, provided in Section 2.17, would avoid and/or minimize potential impacts to migratory birds. No mitigation is required.

e) No Impact. There are no local policies or ordinances protecting biological resources that are relevant to the BSA. Therefore, the Build Alternatives would not

conflict with local policies or ordinances protecting biological resources. No mitigation is required.

f) No Impact. There are no Multispecies Habitat Conservation Plans (MSHCPs) or other adopted Habitat Conservation Plans (HCPs) or Natural Community Conservation Plans (NCCPs) applicable to the area within and in the vicinity of the BSA. As a result, the Build Alternatives would not conflict with any MSHCPs, HCPS, or NCCPs. No mitigation is required.

V. CULTURAL RESOURCES

The potential for the project to result in adverse impacts related to cultural resources was assessed in the *Historic Property Survey Report* (HPSR 2015), the attachments to the HPSR, and Sections 2.7, Cultural Resources; and 2.11, Paleontology, in this IS/EA. The following discussions are based on those analyses.

a) and b) Less Than Significant Impact. It was determined that the only cultural resources within the project Area of Potential Effects (APE) do not appear to be eligible for inclusion in the National Register of Historic Places (National Register), do not qualify as historical resources pursuant to CEQA, or are exempt per the Section 106 Programmatic Agreement (PA). In addition, it has been determined that a finding of No Historic Properties Affected is appropriate because there are no historical resources within the project limits or there are no impacts to historical resources pursuant to CEQA Guidelines Section 15064.5(b)(3).

No archaeological resources requiring evaluation were identified through archival research, consultation, or field survey, and the APE does not appear to be sensitive in terms of archaeological resources.

However, there is the potential to encounter unknown buried cultural resources or archaeological materials within the project disturbance limits during construction of the Build Alternatives. If buried cultural resources or archaeological materials are exposed during construction, it is Caltrans policy that work in the area must halt until a qualified archaeologist can evaluate the nature and significance of the find. In the event that previously unknown buried cultural materials are encountered during construction, compliance with Measure CR-1, provided in Section 2.7, potential impacts to previously unknown cultural resources would be less than significant. No mitigation is required.

c) Less than Significant Impact. Geologic mapping shows that Older Quaternary Alluvial Deposits, which may contain significant vertebrate fossils, are likely present under the project segment of SR-55 and the surrounding areas at depths greater than 10 feet (ft) below ground surface (bgs). Soils above 10 ft within the project disturbance limits are either Artificial Fill or Younger Quaternary Alluvium that likely does not contain fossil remains. Excavation during project construction is not anticipated to extend more than 10 ft bgs and, therefore, it is not expected that sensitive sediments that might contain paleontological resources would be encountered. However, if excavation exceeds 10 ft in depth, that deeper excavation would likely result in permanent effects on paleontological resources. Measure PAL-1, provided in Section 2.11 in this IS/EA, requires preparation and implementation of a Paleontological Mitigation Plan (PMP) in the event paleontological resources are encountered during project excavation. If project impacts extend more than 10 ft bgs, Measure PAL-2 requires the preparation of a Paleontological Evaluation Report (PER), and if required based on the PER, the preparation and implementation of a PMP to avoid and/or minimize impacts if necessary.

d) Less Than Significant Impact. No human remains are known to exist within the project APE. Therefore, construction of the Build Alternatives would not impact known human remains. If human remains are exposed during construction, Measure CR-2 in Section 2.7 requires compliance with State Health and Safety Code Section 7050.5, which states that further disturbances and activities shall cease in any area or nearby area suspected to overlie remains and that the County of Orange (County) Coroner shall be contacted. Pursuant to California Public Resources Code (PRC) Section 5097.98, if the remains are thought to be Native American, the Coroner would notify the Native American Heritage Commission, which would then notify the Most Likely Descendant (MLD). At the same time, the Caltrans District 12 Environmental Branch Chief or the District 12 Native American Coordinator would be contacted so they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC Section 5097.98 are to be followed as applicable. No mitigation is required.

VI. GEOLOGY AND SOILS

The potential for the project to result in adverse impacts related to geology and soils was assessed in the following reports:

- *Project Memorandum Preliminary Geotechnical Information*, Proposed Improvements to State Route 55 between Interstate 405 and Interstate 5 (August 15, 2011)
- *Project Study Report (Project Development Support)* for the SR-55 project (November 2008)
- *Preliminary Foundation Report for Proposed Widening of Edinger Avenue Undercrossing (Bridge No. 55-393), State Route 55, Orange County, California* (July 16, 2012)
- *Preliminary Foundation Report for Proposed Widening of South Tustin Overhead (Bridge No. 55-0026), State Route 55, Orange County, California* (July 16, 2012)
- *Preliminary Foundation Report for Proposed Widening of State Route 55 at the Warner Avenue Overcrossing (Bridge No. 55-394), State Route 55, Orange County, California* (July 16, 2012)
- *Preliminary Foundation Report for Proposed Widening of Dyer Road Uncrossing (Bridge No. 55-0409), State Route 55, Orange County, California* (July 16, 2012)
- *Preliminary Foundation Report for Proposed Widening of MacArthur Boulevard Undercrossing (Bridge No. 55-410), State Route 55, Orange County, California* (July 16, 2012)
- *Revised Preliminary Geotechnical Report/Structures Design Report* (March 4, 2009)
- *Revised Addendum to Structure Preliminary Geotechnical Report* (June 2011)

The findings of those reports are discussed in Section 2.10, Geology/Soils/Seismic/ Topography, in this IS/EA. The following discussions are based on those analyses.

a, i) No Impact. The project segment of SR-55 is not in an Alquist-Priolo Earthquake Fault Zone, and there are no known active or potentially active faults mapped as crossing or in the immediate vicinity of SR-55. Because the project segment of SR-55 is not crossed by a known fault and is not in an Alquist-Priolo Earthquake Fault Zone, the improvements in the Build Alternatives are not expected to be exposed to effects associated with fault displacement and ground rupture. No mitigation is required.

a, ii) and iii) Less Than Significant Impact. The principal seismic hazard in the vicinity of the project segment of SR-55 is ground shaking resulting from an earthquake along one of several major active or potentially active faults that could damage the SR-55 facilities and structures. Those faults include the San Joaquin Hills blind thrust fault (approximately 1.4 miles [mi] from the nearest part of the project segment of SR-55), the Compton-Los Alamitos blind thrust fault (approximately 6 mi

away), and the Newport Inglewood-Rose Canyon fault zone (approximately 3.7 mi away). Moderate to severe seismic shaking is likely to occur in the project area during the life of the improvements provided by the Build Alternatives. As a result, the Build Alternatives would be subject to effects associated with seismic shaking that could damage bridges, ramps, other structures, or the road surfaces. Design and construction of the Build Alternatives consistent with the Caltrans *Highway Design Manual* (HDM), other required standards, and recommendations from the *Final Geotechnical Design Report*, as required in Measure GEO-1 provided in Section 2.10, would avoid and/or minimize the potential for seismic damage to the project facilities. No mitigation is required.

a, iv) No Impact. Because there are no mapped landslides within or in the vicinity of the project segment of SR-55, no permanent effects on the Build Alternative related to landslides are expected. Fill used in the construction of the Build Alternatives would be constructed to appropriate standards for fill in highway facilities, which would reduce the potential for slumping or failure of those areas. No mitigation is required.

b) Less Than Significant Impact. Construction of the Build Alternatives may temporarily disturb soil outside the footprint of the road and structures but within the freeway rights-of-way, primarily in the trample zone around work areas, heavy equipment traffic areas, and material laydown areas. Construction activities in TCEs and staging areas outside the freeway right-of-way would temporarily disturb soils in those areas. Excavated soil in construction areas would be exposed resulting in increased potential for soil erosion during construction compared to existing conditions. During a storm event, soil erosion could occur at an accelerated rate. The anticipated total area disturbed during construction was shown earlier in Table 2.10.1 in Section 2.10 in the IS/EA for the Build Alternatives. During all project construction activities, the construction contractor would be required to adhere to the requirements of the General Construction Permit and to implement erosion and sediment control best management practices (BMPs) specifically identified in the project Storm Water Pollution Prevention Plan to keep sediment from moving off site into receiving waters and impacting water quality in those waters. Erosion impacts related to water quality are specifically evaluated in Section 2.8, Water Quality and Storm Water Runoff, in this IS/EA. Measures WQ-1 and WQ-2, described in Section 2.8, would minimize impacts during construction and operation of the Build Alternatives related to erosion. No mitigation is required.

c) Less Than Significant Impact. The area along SR-55 from approximately MacArthur Boulevard to McFadden Avenue is a mapped liquefaction zone. Key issues in this area are ground settlement, down drag loads on piles, reduced pile lateral capacity, and lateral spreading of embankments that could damage bridge and ramp structures and the road surfaces. As a result, project improvements on this segment of SR-55 would be potentially subject to effects related to liquefaction, lateral spreading, and seismic settlement. Design and construction of the project improvements in the Build Alternatives consistent with the Caltrans HDM, other required standards, and recommendations from the *Final Geotechnical Design Report* (e.g., the use of piles, and removal and recompaction of low-density, near-surface soils as required in Measure GEO-1) would avoid and/or minimize the potential effects of liquefaction, lateral spreading, and seismic settlement on the structures and facilities provided in the Build Alternatives. No mitigation is required.

d) Less Than Significant Impact. Some soils within the disturbance limits for the Build Alternatives may be compressible and/or expansive. Removal and treatment of those types of soils as recommended in the *Final Geotechnical Design Report* (required in Measure GEO-1) would avoid and/or minimize this effect. No mitigation is required.

e) No Impact. The Build Alternatives would not use septic tanks or alternative methods for disposal of wastewater into subsurface soils, and would not connect to existing public wastewater infrastructure. Therefore, the Build Alternatives would not result in impacts related to septic tanks or alternative wastewater disposal methods. No mitigation is required.

VII. GREENHOUSE GAS EMISSIONS

As noted in the CEQA Environmental Checklist at the beginning of this Appendix, an assessment of greenhouse gas (GHG) emissions and climate change is provided in Section 2.20, Climate Change, in this IS/EA. Carbon dioxide emissions are projected to increase over existing levels under both the No Build and Build Alternatives. While Caltrans has included this good-faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's potential direct and indirect impacts with respect to climate change. Caltrans does remain firmly committed to

implementing measures to help reduce the potential effects of the project. These measures are outlined in Section 2.20 in the IS/EA.

VIII. HAZARDS AND HAZARDOUS MATERIALS

The potential for the project to result in adverse impacts related to hazards and hazardous materials was assessed in the *Initial Site Assessment* (ISA 2013) and the *Aerially Deposited Lead Investigation Report* (2013), and in Section 2.12, Hazardous Waste/Materials, in this IS/EA. The following discussions are based on those analyses.

a) Less Than Significant with Mitigation. During construction, there is the potential to encounter hazardous materials in soils and existing road and structures materials. Construction of the Build Alternatives would disturb soils, demolish existing buildings and structures, and remove pavement markings. As a result, contaminants such as aerially deposited lead (ADL) and structural materials (polychlorinated biphenyls, lead chromate, lead-based paint [LBP], and asbestos-containing material [ACM]) may be encountered during construction. Soils with a potential for ADL within the Maximum Disturbance Limits (MDLs) are not considered Resource Conservation and Recovery Act of 1976 hazardous materials. As a result, those soils can be reused on site during construction of the Build Alternatives per guidance in the California Department of Toxic Substances Control variance to Caltrans, and they may be managed as nonhazardous for lead or reused on site without restrictions as specified in Measure HAZ-2 in Section 2.12 in the IS/EA. Therefore, with implementation of Measure HAZ-2, construction of the Build Alternatives would result in less than significant impacts related to ADL. In addition, contaminated soil, groundwater, and old structures could be encountered at properties proposed for full or partial acquisition or use as TCEs for the project.

Typical hazardous materials anticipated to be used during construction of the Build Alternatives (e.g., solvents, paints, fuels) and hazardous wastes generated during construction would be handled in accordance with applicable federal and State regulations and Caltrans policies regarding the use, storage, handling, disposal, and transport of these materials.

Measures HAZ-1 through HAZ-8 require further testing and proper handling of hazardous waste and materials. With implementation of these measures, potential impacts related to hazardous materials would be reduced to less than significant levels.

Routine maintenance activities during operation of the Build Alternatives would comply with applicable regulations with respect to the use, storage, handling, transport, and disposal of potentially hazardous materials. Therefore, the operation of the Build Alternatives would not result in adverse impacts related to hazardous waste or materials. No mitigation is required.

b) Less Than Significant Impact. The Build Alternatives would not create a substantial hazard to the public or the environment through any reasonably foreseeable upset or accident conditions involving the release of hazardous materials. As discussed above in response "a" above, routine hazardous materials such as paint, solvents, and fuel would be used, handled, stored, disposed of, and transported during construction of the Build Alternatives in accordance with applicable local, State, and federal regulations. No mitigation is required.

c) No Impact. There are no existing or proposed schools within 0.25 mi of the alignment of the Build Alternatives. Furthermore, the Build Alternatives do not involve the potential for release of hazardous emissions or handling of acutely hazardous materials. Refer also to responses "a" and "b" above. Therefore, the Build Alternatives would not result in impacts related to schools and hazardous materials. No mitigation is required.

d) Less Than Significant with Mitigation. None of the parcels identified for full or partial acquisition or for the use of TCEs are included on the Cortese List pursuant to Government Code Section 65962.5.[1] However, there are registered underground storage tanks (USTs) currently on or historically reported on parcels within or adjacent to the project area. Due to the nature of the businesses and the proximity of these facilities to the MDLs for the Build Alternatives, there is the potential that contaminated soil and groundwater originating at those parcels would be encountered. A Site Investigation would be required on those parcels to identify potential hazards that may occur during project construction associated with contaminated soil and groundwater as specified in Measures HAZ-1 and HAZ-8. Therefore, with implementation of Measures HAZ-1 and HAZ-8, impacts related to contaminated soil

[1] California Department of Toxic Substances Control. 2007. Hazardous Waste and Substances Site List. Last Accessed on April 10, 2014, from http://www.envirostor.dtsc.ca.gov/public/search.asp?cmd=search&reporttype=CORTESE&site_type=CSITES,OPEN,FUDS,CLOSE&status=ACT,BKLG,COM&reporttitle=HAZARDOUS+WASTE+AND+SUBSTANCES+SITE+LIST.

and groundwater would be reduced to less than significant levels. In addition, as specified in Measures HAZ-4, HAZ-5, and HAZ-6, an ACM survey and LBP survey would be required for existing structures, as well as soil sampling for pesticides on the former agricultural properties. With implementation of these measures, potential impacts related to hazardous material sites would be reduced to less than significant levels.

e) No Impact. John Wayne Airport (JWA) is south and east of the southern terminus of the project segment of SR-55, south of I-405 and east of SR-55. Access to JWA is available to/from SR-55 via I-405. The Build Alternatives would not result in safety hazards for people using SR-55 or living or working in the areas surrounding SR-55 that would be different than that which would occur under existing conditions. Although the Build Alternatives would result in a wider SR-55 facility and improved ramps, the risk of safety hazards associated with JWA would not differ along the project segment of SR-55 with or without the project. The Build Alternatives do not include structures or project features that would be at a substantially higher elevation than the existing freeway structures and facilities. The improvements in the Build Alternatives would not extend into the designated air space for JWA and, therefore, would not result in hazards to air traffic using JWA. Therefore, the Build Alternatives would not result in aviation-related safety impacts. No mitigation is required.

f) No Impact. There are no private airports or airstrips in the vicinity of the project segment of SR-55. As a result, the Build Alternatives would not affect or be affected by aviation activities associated with private airports or airstrips. No mitigation is required.

g) Less Than Significant Impact. As described in Section 2.5, Traffic and Transportation/Pedestrian and Bicycle Facilities, in this IS/EA, the construction of the Build Alternatives would result in temporary impacts to traffic circulation, and pedestrian and bicycle access in the vicinity of the project segment of SR-55. Those impacts could include short-term closures of freeway and arterial facilities and modifications to the existing facilities as described in detail in Section 2.5. The temporary closures and detours may result in short-term effects on emergency response and evacuation along and in the vicinity of the project segment of SR-55 and arterials in the vicinity of SR-55. Specifically, emergency responders would need to use designated detour routes to get around freeway ramp or lane closures or lane reductions on arterials at their crossings of SR-55. This could result in increased travel times for emergency service providers. Similarly, in the event evacuations are

required during the temporary facility closures or lane reductions, there could be delays for traffic evacuating from the area due to the detours and/or temporary reduction in the available road capacity. Measure TR-1, provided in Section 2.5, requires the preparation prior to construction and implementation during construction of a Transportation Management Plan (TMP). The TMP would specifically address requirements for coordination with emergency service providers and accommodation of emergency travel routes and access to, through, and around active construction areas. In addition, Measure CI-3, provided in Section 2.4 in the IS/EA, requires coordination of the project detour plans with fire protection and emergency medical service providers to minimize temporary delays in emergency response times. With implementation of these measures, potential impacts related to emergency response times and plans would not be adverse.

h) No Impact. Wildland fires occur in geographic areas that contain the types and conditions of vegetation, topography, weather, and structure density susceptible to risks associated with uncontrolled fires that can be started by lightning, improperly managed camp fires, cigarettes, sparks from automobiles, and other ignition sources. The project segment of SR-55 and the surrounding areas are developed in urban and suburban uses and do not include brush- and grass-covered areas typically found in areas susceptible to wildfires. As a result, the Build Alternatives would not expose people or structures to a significant risk of loss, injury, or death associated with wildland fires. No mitigation is required.

IX. HYDROLOGY AND WATER QUALITY

The potential for the Build Alternatives to adversely impact hydrology and water quality was assessed in the *Water Quality Assessment Report* (WQAR 2014), the *Location Hydraulic Study State Route 55 Widening Project* (2014) and Section 2.8, Hydrology and Floodplains, and 2.9, Water Quality and Storm Water Runoff, of this IS/EA. The following discussions are based on those analyses.

a) Less Than Significant Impact. During construction of the Build Alternatives, excavated soil would be exposed and there would be an increased potential for soil erosion compared to existing conditions. The total disturbed areas under Alternatives 1, 2, 3, and 4 would be 38.9 ac, 70.3 ac, 77.2 ac, and 64.9 ac, respectively. In addition, chemicals, liquid products, petroleum products (such as paints, solvents, and fuels), concrete-related waste, sanitary waste, and trash and debris may be spilled or leaked during construction with the potential for those pollutants of concern to be transported via storm runoff into receiving waters. Measure WQ-2, provided in

Section 2.9, requires the design, implementation, and maintenance of construction BMPs that would address the potential effects of soil erosion and pollutants of concern on receiving waters. The project construction would also be required to comply with the requirements of the applicable National Pollutant Elimination System (NPDES) permit. Based on compliance with Measure WQ-1 and the NPDES permit requirements, no adverse water quality impacts are anticipated during construction of the Build Alternatives.

Alternatives 1, 2, 3, and 4 would result in permanent increases in impervious surface area by 7.3 ac, 11.3 ac, 15.4 ac, and 15.0 ac, respectively, compared to the existing freeway facility. An increase in impervious area would increase the volume of runoff during a storm, which would more effectively transport pollutants to receiving waters. As shown in Measures WQ-1, WQ-3, and WQ-4 in Section 2.9, the operation of the Build Alternatives would be required to comply with the Caltrans Statewide Storm Water Management Plan (SWMP) and follow the procedures outlined in the Storm Water Quality Handbooks, Project Planning and Design Guide for implementing Design Pollution Prevention and Treatment BMPs (latest edition). This would include coordination with the Santa Ana RWQCB with respect to feasibility, maintenance, and monitoring of Treatment BMPs as set forth in the Caltrans Statewide SWMP. Based on compliance with these Caltrans requirements as shown in Measures WQ-1, WQ-3, and WQ-4, no adverse water quality impacts are anticipated during operation of the Build Alternatives.

b) Less than Significant Impact. Dewatering may be required during construction of the Build Alternatives. If groundwater dewatering becomes necessary during construction, the Build Alternatives would be required to comply with a groundwater dewatering permit as described in Measure WQ-5, which requires monitoring the discharges from groundwater extraction waste from construction to ensure that groundwater effluent that is pumped and ultimately discharged to surface waters does not exceed surface water effluent limitations for particular pollutants. Therefore, it is not anticipated that surface water would be impacted during construction activities as a result of site dewatering, as long as the groundwater discharge meets the RWQCB dewatering permit.

c) and d) Less Than Significant Impact. There are no natural drainages within the disturbance limits of the Build Alternatives. There are extensive storm drain facilities throughout the SR-55 corridor, some of which would be affected during project construction in order to contain storm water flows within the project limits or to

accommodate the project improvements. The changes to drainage facilities as a result of the Build Alternatives include relocation, extension, and/or adjustment of the existing drainage systems; additional inlet, down drains, and/or overside drains; and abandonment and/or removal of system components that are no longer serviceable. The Build Alternatives would require the relocation of existing culverts and concrete pipe storm drains in the SR-55 right-of-way described earlier in Table 1.8 in Chapter 1 in the IS/EA. In addition, the Build Alternatives would reconfigure Lane Channel (Drainage E) from a trapezoidal channel to a rectangular channel and would realign that channel 2 ft to the west. Lane Channel is an Orange County Flood Control District (OCFCD) facility. None of the storm drain modifications would substantially alter existing drainage patterns in and adjacent to the project disturbance limits or the capacity of the storm drain facilities. Erosion during project construction and operation would be addressed based on compliance with the applicable NPDES permit and Measures WQ-1 and WQ-2. Therefore, the Build Alternatives do not include drainage modifications that would result in substantial erosion, siltation, or flooding on or off the project site. No mitigation is required.

e) Less Than Significant Impact. The Build Alternatives propose to modify an existing transportation facility. The Build Alternatives would not substantively increase the total impervious surface areas as noted in response "a" in Section IX, Hydrology and Water Quality, above, and, therefore, would not increase peak storm flows such that they would impact downstream drainage facilities. Compliance with the requirements of the Caltrans NPDES permit, Measure WQ-1, and Measure WQ-2 would minimize any incremental pollutant loading associated with the increased impervious surface areas in the Build Alternatives. No mitigation is required.

f) Less Than Significant Impact. As discussed above, runoff associated with the Build Alternatives would be treated to remove pollutants of concern as required in Measures WQ-1 and WQ-2 in Section 2.9 in the IS/EA. In addition, refer to responses "a" and "e" in Section IX, Hydrology and Water Quality, above. No substantial degradation to water quality would occur as a result of the Build Alternatives.

g) No Impact. According to Federal Emergency Management Agency Flood Insurance Rate Map Nos. 06059C0278J and 06059C0277J, the two floodplains in the project area are Lane Channel (OCFCD Facility No. 8) and the Santa Ana-Santa Fe Channel (OCFCD Facility No. F10). The Build Alternatives do not propose the construction of housing in a 100-year flood hazard area. Therefore, the Build

Alternatives project would not result in impacts related to the placement of housing in the 100-year floodplain. No mitigation is required.

h) Less than Significant Impact. The Build Alternatives would include construction activities in Lane Channel and near the Santa Ana-Santa Fe Channel. The construction activities would not reduce or otherwise modify the flood storage capacity or flood flows in these two channels. As a result, construction activities under the Build Alternatives would not result in temporary adverse impacts related to hydrology and floodplains.

The Build Alternatives would result in a longitudinal encroachment into Lane Channel at its crossing of SR-55. Lane Channel would be reconfigured and slightly realigned to the west (farther from SR-55), and modified from the existing open trapezoidal concrete-lined section to a rectangular section. This section would be sized to carry the 100-year flood discharge flow, including flows from the project improvements, and would include approximately 4 ft of additional space (freeboard) in the channel above the recorded high water mark. The road surface on the freeway would be approximately 2 ft above the top of Lane Channel and the surrounding areas. Therefore, there is no potential for water to overtop the channel or flood SR-55 as a result of the improvements provided in the Build Alternatives.

The Build Alternatives include improvements in the Santa Ana-Santa Fe Channel where it crosses perpendicularly under SR-55. The geometry of this channel would not be altered, and no structures would be constructed in this floodplain as part of the Build Alternatives. Therefore, there would be no longitudinal or other physical encroachments into the Santa Ana-Santa Fe Channel or floodplain under the Build Alternatives.

As defined in 23 CFR 650 Subpart A, the encroachment in Lane Channel under the Build Alternatives would be classified as Minimal. The potential encroachments into the Lane Channel and Santa Ana-Santa Fe Channel floodplains associated with the Build Alternatives would be classified as “insignificant encroachments” and would not be adverse.

The proposed improvements in and near Lane Channel and the Santa Ana-Santa Fe Channel would be designed and constructed in consultation with the OCFCD to contain the base flood with additional freeboard as required by the OCFCD. Those improvements would be within existing OCFCD parcels and would not affect the adjacent land uses. No mitigation is required.

i) Less Than Significant Impact. The Santa Ana River Project is an extensive system of dams, levees, and other components, which provides flood protection to San Bernardino, Riverside, and Orange Counties along the entire 75-mile length of the Santa Ana River from its headwaters to the Pacific Ocean. Seven Oaks Dam and Prado Dam on the Santa Ana River are two major components of the Santa Ana River Project.[1]

In the event one or both of those dams failed, the water in the reservoirs behind those dams would be released to the Santa Ana River. The release of that large a volume of water could result in flooding in low-lying areas in central and coastal Orange County. The nearest part of the project segment of SR-55 to the Santa Ana River is approximately 4 mi west of SR-55. The Build Alternatives would not modify the two floodplains crossed by SR-55. As a result, the Build Alternatives would not expose people or structures to a significant risk of loss, injury, or death as a result of flooding. No mitigation is required.

j) No Impact. The southern terminus of the project segment of SR-55 is approximately 4 mi from the northernmost part of Upper Newport Bay, which drains to the Pacific Ocean. The Tsunami Map for Emergency Planning for the Newport Beach Quadrangle[2] shows that the nearest tsunami inundation area to the project segment of SR-55 is Upper Newport Bay. Based on the distance from the project improvements to Upper Newport Bay, there is no anticipated risk of inundation from a tsunami under the Build Alternatives.

A seiche is a tsunami-like condition in an enclosed body of water like a lake or reservoir. The nearest enclosed bodies of water to the project segment of SR-55 are Upper Newport Bay and Prado Dam. Prado Dam is more than 15 mi northeast of the northernmost part of the project segment of SR-55. Based on the distances of SR-55 to these two bodies of water, there is no anticipated risk of inundation from a seiche under the Build Alternatives.

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1 Orange County Public Works Flood Division. Santa Ana River Project. Last accessed April 15, 2014, from http://ocflood.com/sarp/.

2 California Department of Conservation. March 15, 2009. *Tsunami Map for Emergency Planning for the Newport Beach Quadrangle*. Last accessed April 15, 2014, from http://www.conservation.ca.gov/cgs/geologic_hazards/Tsunami/Inundation_Maps/Orange/Documents/Tsunami_Inundation_NewportBeach_Quad_Orange.pdf.

Mudflows occur when soil is saturated and flows downhill. There are no hills adjacent to or in the vicinity of the project segment of SR-55. As a result, there is no anticipated risk to the Build Alternatives as a result of a mudflow.

No mitigation is required.

X. LAND USE AND PLANNING

The potential for the Build Alternatives to result in adverse impacts related to land use and planning was assessed in the CIA (2015) and in Sections 2.1, Land Use, and 2.3, Community Impacts, in this IS/EA. The following discussions are based on those analyses.

a) No Impact. The project segment of SR-55 is an existing freeway with interchanges/ramps, retaining walls, sound walls, and other structural features. The areas adjacent to both sides of the project segment of SR-55 are developed in residential and nonresidential urban and suburban uses. Existing land uses in the southern part of the study area between I-405 and Edinger Avenue are generally commercial and industrial uses with a small number of multifamily residential uses. The north part of the study area between Edinger Avenue and I-5 is dominated by multifamily residential and commercial uses. Construction of the Build Alternatives would require TCEs on residential, commercial, and industrial properties in the project area but would not result in the acquisition of any residences. Because most of the TCEs would be on land currently being used for landscaping and parking lots adjacent to the existing SR-55 right-of-way, the temporary use of such land for construction activities would not adversely affect community character, divide existing land uses or existing communities, or create barriers between existing communities. No mitigation is required.

b) No Impact. The proposed project is listed in the 2012 financially constrained RTP (RTP ID 2M0733), which was found to conform by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) on June 4, 2012. The project is also included in the Southern California Association of Governments financially constrained 2015 FTIP (FTIP ID ORA100511), which was found to conform by the FHWA and FTA on December 15, 2014. The design concept and scope of the proposed project are consistent with the project description in the 2012 RTP and 2015 FTIP, and is intended to meet the traffic needs in the area based on local land use plans. Thus, the Build Alternatives are consistent with these regional and federal transportation plans.

The Build Alternatives would be consistent with the goals and policies in the General Plans of the affected cities. The Build Alternatives would not change existing land use patterns along SR-55 because SR-55 is an existing transportation facility in a highly developed area, and the Build Alternatives would result in a limited amount of property acquisition. The Build Alternatives would not require amendment of the affected cities' General Plans. Therefore, the Build Alternatives are consistent with local plans and policies. No mitigation is required.

c) No Impact. As discussed earlier in the response to checklist question "f" in Section IV, Biological Resources, there are no MSHCPs or any other adopted HCPs or NCCPs applicable to the area within and in the vicinity of the BSA. As a result, the Build Alternatives would not conflict with any MSHCPs, HCPS, or NCCPs. No mitigation is required.

XI. MINERAL RESOURCES

The potential for the Build Alternatives to result in adverse impacts related to mineral resources was assessed based on information in the Cities of Tustin, Irvine, and Santa Ana General Plans.

a) and b) No Impact. According to the City of Santa Ana General Plan Land Use Element (1998, page A-51), there are no energy or mineral extraction activities or known Significant Mineral Aggregate Resources Areas or oil or gas fields in the City.

The City of Irvine General Plan (2012) does not discuss mineral resources or extraction activities. As a result, it is expected that there are no known mineral resources or extraction activities in the City of Irvine.

The only identified mineral resource in the City of Tustin is a mercury-barite deposit in an area referred to as Red Hill as discussed in the General Plan Conservation/Open Space/Recreation Element (2008, page 40). Although the General Plan does not indicate where Red Hill is, it would seem reasonable to assume it is the low foothills of the Santa Ana Mountains in the east part of the City. No extraction of this resource is currently occurring.

As a result, the Build Alternatives would not result in impacts on known mineral resources or resource extraction activities. No mitigation is required.

XII. NOISE

The potential for the project to result in adverse noise impacts was assessed in the *Noise Study Report* (NSR 2015), Section 2.14, Noise, in the IS/EA, and in CEQA-specific analysis conducted in September 2015. The following discussion is based on those analyses.

a) Less Than Significant Impact. Noise levels during construction of the Build Alternatives may impact commercial, industrial, and noise sensitive receptors. Typical construction noise levels may reach 88 A-weighted decibels (dBA) maximum instantaneous noise level (L_{max}) at a distance of 50 ft from the noise sources. The following minimization measures, described in detail in Section 2.14.4, would minimize construction noise impacts under the Build Alternatives:

- **Measure N-1:** Compliance with the Caltrans Standard Specifications, Section 14-8.02, "Noise Control" during construction.
- **Measure N-2:** Compliance with Section 18-314 of the City of Santa Ana Municipal Code limiting construction activities in the City of Santa Ana to between the hours of 7:00 AM and 8:00 PM, Monday through Saturday, excluding Sundays and federal holidays.
- **Measure N-3:** Compliance with Section 4317 of the City of Tustin Municipal Code limiting construction activities in the City of Tustin to between the hours of 7:00 AM and 6:00 PM, Monday through Friday, and the hours of 9:00 AM and 6:00 PM on Saturdays, excluding Sundays and City-observed federal holidays.
- **Measure N-4:** Compliance with Section 6-8-205 of the City of Irvine Municipal Code limiting construction activities in the City of Irvine to between the hours of 7:00 AM and 7:00 PM, Monday through Friday, and the hours of 9:00 AM and 6:00 PM on Saturdays, excluding Sundays and federal holidays.

Some residents in the City of Tustin in the study area are currently and would continue to be exposed to traffic noise approaching or exceeding Caltrans Noise Abatement Criteria (NAC) and noise standards in the General Plan of the City of Tustin. However, because the Build Alternatives would not result in any substantial increases in noise levels in the study area, no significant noise impact would occur under CEQA. Noise abatement measures, including noise barriers, have been evaluated to minimize the noise impacts. With implementation of the noise abatement measures, the noise levels would be minimized. Therefore, long-term noise impacts with the proposed project are considered less than significant.

b) Less Than Significant Impact. The closest sensitive receptors are approximately 50 ft from the construction areas for the Build Alternatives. The use of a large bulldozer during construction of the Build Alternatives would generate the highest vibration level of 0.089 peak particle velocity (PPV) inches per second (in/sec) at a distance of 25 ft.

The sensitive receptors may be subject to a ground-borne vibration level of 0.042 PPV (in/sec). This vibration level is considered distinctly perceptible to humans and would not result in community annoyance. Also, this vibration level would be well below the damage threshold of 0.3 PPV (in/sec) for older residential structures and would not have the potential to damage nearby residential structures. In addition, compliance with local Noise Ordinances and the Caltrans Standard Specifications required in minimization Measures N-1 through N-4 in Section 2.14 would minimize vibration impacts. Therefore, groundborne vibration and noise impacts are considered less than significant.

Groundborne vibration from vehicles driving on the project facilities would not result in any measurable changes in vibration levels compared to the existing conditions. Therefore, vibration impacts are considered less than significant.

c) Less Than Significant Impact. The noise level increases along SR-55 during the operation of the Build Alternatives from existing conditions are shown in Table 2.14.4 in Section 2.14, which show that noise levels would increase by up to 6 dBA as a result of the Build Alternatives.

In addition to the noise impact analysis along the limits of physical improvements on SR-55, an off-site CEQA noise analysis was completed. The potential noise level increases along local roadways were calculated from average daily traffic (ADT) volumes obtained from the *Final Traffic Operations Report* (2015). Table A-1 presents the traffic noise levels on local roadways for Existing conditions, Opening Year (2020) with and without the project for Alternatives 3 and 4, and Horizon Year (2040) with and without the project for Alternatives 3 and 4. Table A-1 shows that the permanent noise increase from Existing to the Opening Year (2020) for both Alternatives 3 and 4 would range from 0.0 to 0.5 dBA. The permanent noise increase from Existing to the Horizon Year (2040) would range from 0.0 and 6.9 dBA for Alternative 3 and from 0.1 and 7.1 dBA for Alternative 4. In addition to the comparison to existing noise levels, Table A-1 shows that the project contribution to the permanent noise level increase along local roadways for Alternatives 3 and 4 is

less than 1 dBA. This noise level increase is not perceptible to the human ear in an outdoor environment. Therefore, the permanent increase in noise levels as a result of the Build Alternatives is not considered substantial and impacts are considered less than significant under CEQA. No mitigation measures are required.

d) Less Than Significant Impact. Refer to the response to comment XII.a, above, which indicates that noise levels during construction of the Build Alternatives may impact sensitive receptors and that Measures N-1 through N-4 would minimize construction noise impacts under the Build Alternatives, to a less than significant level.

e) No Impact. As discussed earlier, JWA is south and east of the southern terminus of the project segment of SR-55, south of I-405 and east of SR-55. The Build Alternatives would not result in any changes in the takeoff and landing patterns or total volumes of flights at JWA. As a result, the Build Alternatives would not expose people using SR-55 or living or working in the areas surrounding SR-55 to aviation-related noise levels different than would occur under existing conditions. Therefore, the Build Alternatives would not result in aviation-related noise impacts. No mitigation is required.

f) No Impact. There are no private airports or airstrips in the vicinity of the project segment of SR-55. As a result, the Build Alternatives would not affect or be affected by aviation noise levels associated with private airports or airstrips. No mitigation is required.

XIII. POPULATION AND HOUSING

The potential for the Build Alternatives to result in adverse impacts related to population and housing was assessed in the CIA (2015) and Sections 2.2, Growth, and 2.3, Community Impacts, in this IS/EA. The following discussions are based on those analyses.

a) No Impact. As discussed in detail in Section 2.2, the potential growth-related impacts of the Build Alternatives were considered in the context of the first-cut screening analysis approach to assessing the potential for growth-inducing effects. That analysis determined that the Build Alternatives would:

- Not provide new transportation facilities or create new access points to areas not previously accessible and, therefore, would not result in changes in accessibility to the transportation system in the area.

Table A-1 Traffic Noise Levels on Local Roadways

Roadway Name	Roadway Segment	Existing, dBA CNEL	2020 (Opening Year), dBA CNEL							2040 (Horizon Year), dBA CNEL						
				Alternative 3			Alternative 4				Alternative 3			Alternative 4		
			Year 2020 No Build	Year 2020 Alternative 3	Alternative 3 Increase over Existing	Alternative 3 Increase over 2020 No Build	Year 2020 Alternative 4	Alternative 4 Increase over Existing	Alternative 4 Increase over 2020 No Build	Year 2040 No Build	Year 2040 Alternative 3	Alternative 3 Increase over Existing	Alternative 3 Increase over 2040 No Build	Year 2040 Alternative 4	Alternative 4 Increase over Existing	Alternative 4 Increase over 2040 No Build
Newport Ave	Edinger Ave to Sycamore Ave	58.2	58.2	58.2	0.0	0.0	58.2	0.0	0.0	65.9	65.1	6.9	-0.8	65.3	7.1	-0.6
	Sycamore Ave to Walnut Ave	63.2	63.6	63.7	0.5	0.1	63.7	0.5	0.1	66.7	66.9	3.7	0.2	66.8	3.6	0.1
	Walnut Ave to SB I-5	67.3	67.5	67.7	0.4	0.2	67.7	0.4	0.2	68.0	68.2	0.9	0.2	68.2	0.9	0.2
	SB I-5 to NB I-5	68.0	68.1	68.3	0.3	0.2	68.3	0.3	0.2	68.5	68.6	0.6	0.1	68.6	0.6	0.1
Red Hill Ave	Edinger Ave to Sycamore Ave	69.8	70.0	69.8	0.0	-0.2	69.8	0.0	-0.2	69.8	69.6	-0.2	-0.2	69.6	-0.2	-0.2
	Sycamore Ave to Walnut Ave	69.3	69.4	69.5	0.2	0.1	69.5	0.2	0.1	69.4	69.5	0.2	0.1	69.5	0.2	0.1
	Walnut Ave to Nisson Rd	68.8	68.9	69.2	0.4	0.3	69.2	0.4	0.3	68.9	69.1	0.3	0.2	69.2	0.4	0.3
	Nisson Rd to SB I-5	69.9	69.9	70.2	0.3	0.3	70.2	0.3	0.3	69.9	70.2	0.3	0.3	70.2	0.3	0.3
	SB I-5 to NB I-5	69.8	69.8	69.9	0.1	0.1	69.9	0.1	0.1	69.8	69.8	0.0	0.0	69.9	0.1	0.1
	NB I-5 to El Camino Real	69.5	69.6	69.6	0.1	0.0	69.6	0.1	0.0	69.7	69.8	0.3	0.1	69.8	0.3	0.1

Source: *LSA Associates, Inc.* (2015).
Ave = avenue
CNEL = Community Noise Equivalent Level
dBA = A-weighted decibels
I-5 = Interstate 5
NB = northbound
Rd = Road
SB = southbound

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Accommodate existing and planned growth and would not influence growth beyond what is currently planned.

- Would not influence growth beyond those projects that are currently planned for the area and would not change the rate, type, or amount of growth and reasonably foreseeable growth in the Cities of Tustin, Santa Ana, and Irvine.

No mitigation is required.

b) and c) No Impact. The Build Alternatives would not result in the acquisition of any residential units, displacement of any residents, or the need for replacement housing and, therefore, would not result in impacts related to population and housing. No mitigation is required.

XIV. PUBLIC SERVICES

The potential for the Build Alternatives to impact public services and facilities is assessed in the CIA (2015) and Sections 2.1, Land Use, and 2.4, Utilities and Emergency Services, in this IS/EA. The following discussions are based on those analyses.

a, i) and ii) Less Than Significant Impact. Fire protection and emergency medical/paramedic services in the Cities of Santa Ana, Tustin, and Irvine are provided by the Orange County Fire Authority under contract to those cities. Police protection services in the study area are provided by the Cities of Tustin, Santa Ana, and Irvine Police Departments. As described earlier in the response to checklist question "g" in Section VIII, Hazards and Hazardous Materials, construction of the Build Alternatives would result in temporary impacts to traffic circulation. Those impacts could include short-term closures of freeway and arterial facilities and modifications to the existing facilities that could result in short-term effects on emergency response (fire and police) times in the vicinity of the project segment of SR-55 and arterials in the vicinity of SR-55. Specifically, emergency responders would need to use designated detour routes to get around freeway ramp or lane closures or lane reductions on arterials at their crossings of SR-55. This could result in increased travel times for those emergency service providers. Measure TR-1, provided in Section 2.5 in the IS/EA, requires the preparation prior to construction and implementation during construction of a TMP. The TMP will specifically address requirements for coordination with emergency service providers and accommodation of emergency travel routes and access to, through, and around active construction

areas. In addition, Measure CI-3, provided in Section 2.4 in the IS/EA, requires the coordination of detour plans with law enforcement, fire protection, and emergency medical service providers to minimize temporary delays in emergency response times. No mitigation is required.

In the long term, the Build Alternatives would reduce traffic congestion and result in decreased travel times on SR-55 between I-5 and I-405. These improvements in traffic flow are likely to improve emergency response times on the project segment of SR-55. Therefore, operation of the Build Alternatives would not result in adverse effects on the delivery of emergency services in the long term.

a, iii), iv), and v) Less than Significant Impact. During construction of the Build Alternatives, access to schools, parks, and other public and community facilities in the vicinity of the project segment of SR-55 (including Sandpointe Park, McFadden-Pasadena Parkette, Hillview High School/Tustin Adult School, Jeane Thorman Elementary School, A.G. Currie Middle School, Tustin Family and Youth Center, and Industrial Santa Ana Post Office) would not be affected. MacArthur Boulevard, McFadden Avenue, Sycamore Avenue, Red Hill Avenue, and Grand Avenue have been identified as potential detour routes for overnight mainline, ramp, and arterial closures. Because those closures would occur outside the hours of operation for those community facilities, none of the community facilities would be adversely affected by travel delays or increased noise levels as a result of temporary overnight detours during construction. The TMP described earlier would further minimize traffic-related impacts during construction. No mitigation is required.

The Build Alternatives would not result in direct or indirect adverse visual/aesthetic, air quality, water quality, or noise effects on schools, parks, and the other community facilities in the vicinity of the project segment of SR-55. No mitigation is required.

XV. RECREATION

The potential for the Build Alternatives to adversely impact recreation resources was assessed in the CIA (2015) and Section 2.1, Land Use, in this IS/EA. The following discussions are based on the findings of that analysis.

a) No Impact. The Build Alternatives propose modifications to the existing SR-55 freeway mainline, ramps, and arterial interchanges. The Build Alternatives would not result in the construction of residential or other land uses that would attract visitors to parks in the cities adjacent to the project segment of SR-55 or to regional parks and

other recreation facilities. As a result, the Build Alternatives would not result in increased demand for those resources and, therefore, would not contribute to substantial or accelerated deterioration of those facilities. No mitigation is required.

b) No Impact. The Build Alternatives do not include the construction of new recreational facilities or expansion of existing recreational facilities. Therefore, the Build Alternatives would not result in adverse effects related to constructing new or expanded recreation facilities. No mitigation is required.

XVI. TRANSPORTATION/TRAFFIC

The potential for Build Alternatives to result in adverse traffic impacts was assessed in the *Revised Traffic Operations Report* (2015) and in Section 2.5, Traffic and Transportation/Pedestrian and Bicycle Facilities, in this IS/EA. The following discussions are based on those analyses.

a) Less Than Significant Impact. Construction of the Build Alternatives would temporarily impact traffic circulation and pedestrian and bicycle access in the vicinity of the project segment of SR-55. Those impacts could include short-term closures of freeway and arterial facilities as summarized in Tables 2.5.1, 2.5.2, and 2.5.3 in Section 2.5 in the IS/EA, and modifications to the existing facilities. Temporary closures would be limited to overnight (between 10 PM and 5 AM) with limited durations of 2 to 10 days. Temporary modifications to the freeway mainline, connector and ramp facilities, and arterial streets could include narrowing the widths of the travel lanes and shoulders, and reductions in the number of available travel lanes and speed limits. These temporary modifications would allow for traffic to pass through the project area on SR-55, the ramps, and the arterials, but those travelers would be expected to experience some delays as they travel on those facilities. The temporary ramp closures are not expected to occur for longer than 10 nights at any given ramp. No two consecutive on- or off-ramps in the same direction would be closed at the same time to minimize inconvenience to the traveling public.

The temporary closures of arterial roads would include closure of the sidewalks along those roads at their crossings of SR-55. The detours for vehicular traffic to travel around the closed arterials would also be signed for use by pedestrians and bicyclists. As a result, pedestrians and bicyclists who use those arterials would be required to travel north or south of the closed arterial to reach the closest open arterial crossing at SR-55. This would result in a longer travel path for both pedestrians and bicyclists and would substantially increase their travel times. However, the arterials would be

closed only overnight and for very limited periods, which would minimize the effects of the closures on pedestrians and bicyclists.

Pedestrians and bicyclists are not allowed to travel on the SR-55 mainline or ramps. The temporary mainline and ramp closures and the temporary detours associated with those closures would not affect the existing Class I bike paths on the east and west sides of SR-55. The temporary arterial closures and the temporary detours associated with those closures would not affect the existing Class I bike paths on the east and west sides of SR-55. As a result, those closures under all the Build Alternatives would not impact those Class I bike paths and the pedestrians and bicyclists using those bike paths.

The temporary impacts on motorists, pedestrians, and bicyclists would be avoided and/or minimized based on implementation of the TMP during construction as required in Measure T-1. The TMP would address short-term traffic and transportation impacts during construction. No mitigation is required.

Tables 2.5.4 through 2.5.14 in Section 2.5 in the IS/EA show the levels of service, travel times, and travel speeds for the Build Alternatives and the No Build Alternatives in the AM and PM peak hours in 2020 and 2040. As shown, for most segments and ramps, the Build Alternatives perform better than the No Build Alternative for these performance measures in both 2020 and 2040. No mitigation is required.

The Build Alternatives are consistent with the applicable local General Plans and regional transportation plans to reduce congestion and improve operation on the project segment of SR-55. In addition to the improvements on the SR-55 mainline and ramps, the Build Alternatives include design features to improve the intersections between the freeway ramps and the local arterial streets including accommodating pedestrians, bicycles, and mass transit. No mitigation is required.

b) Less Than Significant Impact with Mitigation SR-55 is not included in the highway system in the 2013 Orange County Congestion Management Program (CMP, Orange County Transportation Authority) but two intersections between SR-55 ramps and local arterials are included in the CMP Highway System. The level of service (LOS) standard for CMP intersections is LOS E. The performances of the two ramp interchanges included in the CMP and as forecasted in the traffic report for 2020 and 2040 are:

- **SR-55 northbound ramp at Edinger Avenue in Tustin:** The 2013 CMP shows this intersection operating at LOS A in the AM and PM peak hours. Table 2.5.6 in Section 2.5 shows this intersection operating at LOS C in the AM and PM peak hours under the No Build and all the Build Alternatives in 2020. Table 2.5.12 shows this intersection operating at LOS C in the AM and PM peak hours under the No Build Alternative and all of the Build Alternatives in 2040.
- **SR-55 northbound ramp at Irvine Boulevard in Tustin:** The 2013 CMP shows these ramps operating at LOS A in the AM peak hour and LOS B in the PM peak hour. Table 2.5.6 in Section 2.5 shows this intersection operating at LOS C in the AM peak hour and LOS B in the PM peak hour under the No Build and all the Build Alternatives in 2020. Table 2.5.12 in Section 2.5 shows this intersection operating at LOS C in the AM peak hour under the No Build Alternative and all of the Build Alternatives, and LOS B in the PM peak hour under the No Build and Alternatives 1, 2, and 3, and LOS C under Alternative 4 in 2040.

Because the Build Alternatives would not exceed the LOS E standard in the CMP, they would not conflict with the Orange County CMP. No mitigation is required.

As discussed in Section 2.5 in the IS/EA, the limited access at the McFadden Avenue on-ramp proposed under both Alternatives 3 and 4 would divert more traffic to the local arterials. The resulting increased delay and degradation in LOS would result in potentially significant impacts to the Northbound I-5 On-ramp/Newport Avenue intersection in 2020 and 2040. With implementation of Measure T-3, which requires operational improvements at this intersection, this long-term traffic impact would be mitigated to a less than significant level.

c) No Impact. As discussed earlier, JWA is south and east of the southern terminus of the project segment of SR-55, south of I-405, and east of SR-55. The runways at JWA are generally oriented north-south, and planes can take off to the south or north or land from the south or north. Aircraft leaving or approaching JWA on the north follow a flight path that passes over part of the project segment of SR-55. The Build Alternatives do not include any structures or project features that would be at a substantially higher elevation than the existing freeway structures and facilities. The improvements in the Build Alternatives would not extend into the designated air space for JWA and, therefore, would not result in changes in air traffic patterns or flight paths at JWA. The Build Alternatives do not include the construction of residential or nonresidential uses that could result in increased demand for air travel

services at JWA. Therefore, the Build Alternatives would not result in safety risks associated with aviation operations at JWA. No mitigation is required.

d) Less Than Significant Impact. The Build Alternatives would be designed, constructed, and operated consistent with the Caltrans HDM and other applicable standards and specifications for freeways, ramps, arterial intersections, retaining walls, sound walls, drainage features, and utility relocations/modifications. The Build Alternatives would not include hazardous design features. Farm equipment, pedestrians, and bicyclists would not be allowed to operate on the SR-55 mainline and ramps. Pedestrians and bicyclists would be allowed to use arterial streets at their crossings of SR-55. Therefore, the Build Alternatives would not include any hazardous design features or incompatible uses. No mitigation is required.

e) Less Than Significant Impact. As described earlier in responses to checklist questions "a i" and "a ii" in Section XIV, Public Services, construction of the Build Alternatives would result in temporary impacts to traffic circulation including emergency services. Those impacts would be avoided and/or minimized based on implementation of the TMP during construction required in Measure T-1. The TMP would specifically address requirements for coordination with emergency service providers and accommodation of emergency travel routes and access to, through, and around active construction areas. In addition, Measure CI-3, provided in Section 2.4 in the IS/EA, requires the coordination of detour plans with law enforcement, fire protection, and emergency medical service providers to minimize temporary delays in emergency response times. No mitigation is required.

In the long term, the Build Alternatives would reduce traffic congestion and travel times on SR-55 between I-5 and I-405. The improvements in the Build Alternatives are likely to improve emergency response times on SR-55. Therefore, the Build Alternatives would not result in adverse effects on the delivery of emergency services in the long term.

f) Less than Significant Impact. As discussed in the CIA and Section 2.1, Land Use, in the IS/EA, the Build Alternatives would not conflict with adopted policies, plans, or programs supporting alternative transportation modes. The design of the freeway and ramp improvements in the Build Alternatives would accommodate public and private buses. The improvements to arterials at their crossings of SR-55 would be designed to accommodate transit vehicles, pedestrians, and bicyclists. The arterial improvements would also include features consistent with Americans with

Disabilities Act requirements. As a result, the Build Alternatives would not conflict with alternative transportation modes. No mitigation is required.

XVII. UTILITIES AND SERVICE SYSTEMS

The potential for the Build Alternatives to adversely impact utilities and service systems was assessed in the CIA (2015) and Section 2.4, Utilities and Emergency Services, in this IS/EA. The following discussions are based on those analyses.

a), b), and e) Less Than Significant Impact. The Build Alternatives would not generate wastewater or discharge wastewater to the area sewer system. As a result, the Build Alternatives would not exceed wastewater treatment requirements, require or result in the construction of new wastewater treatment facilities, or result in the need for a determination by a wastewater treatment provider that it has adequate capacity to serve the project. No mitigation is required.

Existing Orange County Sanitation District (OCSD) vitrified clay sewer pipes in the disturbance limits for the Build Alternatives would be extended under the highway and road facilities as needed to accommodate the widened freeway and modified ramp facilities. Those modifications to the existing sewer facilities would not change the capacity of those pipes. The modifications would be coordinated with the OCSD as required in Measure CI-1.

c) Less Than Significant Impact. Refer to responses "c," "d," and "e" in Section IX, Hydrology and Water Quality, for discussion of the existing storm water drainage facilities that would be extended or modified to accommodate the widened freeway and modified ramp facilities under the Build Alternatives. Those modifications would not require the construction of new storm water drain facilities or substantial increases in the capacity of the existing storm drain facilities. No mitigation is required.

d) Less Than Significant Impact. The use of water during project construction would be limited to water trucked to the site for dust control. The amount of water used during construction would be minimal. The use of water during project operations would be limited to areas in which new landscaping requires short-term watering while the plant material becomes established and areas in which limited use of water for landscaping requires permanent watering. The amount of landscaping provided in the Build Alternatives would not differ substantially from the existing amount of landscaping in the limits of SR-55 and, therefore, the amount of water

needed for landscaping would be approximately the same as the existing demand. As a result, the Build Alternatives would not require the water districts serving the project area to provide new or expanded entitlements to meet the need for water during construction and operation of the Build Alternatives.

f) Less Than Significant Impact. During project construction, two types of waste materials would be collected: vegetation, other plant material, and some excess soils; and solid waste such as concrete, asphalt, and wood. The waste collected during construction would be properly disposed of at an existing landfill or recycled. The amount of waste that would be generated during the construction of the Build Alternatives would be limited and would occur only during the construction period. That amount of waste would be only a very small amount of the total waste disposed of or recycled at area recycling facilities and landfills, on both a daily and annual basis. Therefore, the amount of waste generated during construction of the Build Alternatives is anticipated to be accommodated by the existing recycling and landfill facilities in Orange County.

The waste collected during operation of the Build Alternatives would be properly disposed of at an existing landfill or recycled. The amount of waste that would be generated during the operation of the Build Alternatives would be only a very small amount of the total waste disposed of or recycled at area recycling facilities and landfills, on both a daily and annual basis. Therefore, the amount of waste generated during operation of the Build Alternatives is anticipated to be accommodated by the existing recycling and landfill facilities in Orange County.

Because the amount of waste generated during construction and operation of the Build Alternatives is anticipated to be accommodated by the existing recycling and landfill facilities in Orange County, no mitigation is required.

g) Less than Significant Impact. Any hazardous waste generated during construction of the Build Alternatives, collected during normal waste collection activities, or collected as a result of an accidental release on the SR-55 freeway or ramp facilities would be collected, handled, transported, and disposed of consistent with applicable federal, State, regional, and local regulations. Hazardous wastes would not be comingled with greenwaste nonhazardous trash. No mitigation is required.

Waste materials generated during construction and operation of the Build Alternatives would be disposed of in accordance with federal, State, and local regulations related

to recycling, which would minimize the amount of waste material entering local landfills. No mitigation is required.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

a) Less Than Significant Impact. The potential for the Build Alternatives to result in significant impacts to biological or cultural resources, specifically, is discussed in Sections 2.7, 2.10, 2.11, 2.15, 2.16, 2.17, and 2.18 in the IS/EA. The Build Alternatives would not degrade the quality of the environment or impact any animal or plant species or associated habitat. The Build Alternatives would result in only minimal impacts to areas under the jurisdiction of the CDFW, the RWQCB, and the USACE but would not impact any wetlands.

Based on the results of the HRSR (2014) and the attachments to that report, it was determined that the cultural resources within the APE do not appear to be eligible for inclusion in the National Register, do not qualify as historical resources pursuant to CEQA, or are exempt per the Section 106 PA. In addition, it has been determined that a finding of no impact is appropriate because there are no historical resources within the project limits or there are no impacts to historical resources pursuant to CEQA Guidelines Section 15064.5(b)(3). However, there is the potential to encounter unknown buried cultural resources or archaeological materials within the project disturbance limits during construction of the Build Alternatives. In the event that previously unknown buried cultural materials are encountered during construction, compliance with Measure CR-1, provided in Section 2.7, would avoid and/or minimize potential impacts to previously unknown cultural resources.

To avoid impacts to paleontological resources that may be present where excavation may occur in areas of undisturbed soils, a PMP, detailed in Measure PAL-1, provided in Section 2.11 of this IS/EA, would be developed during the final design phase of the project and implemented during the construction phase of the project. In addition, if the project construction plans are modified to include excavation deeper than 10 ft bgs, a PER, detailed in Measure PAL-2 in Section 2.11, would be developed. The potential to impact subsurface prehistoric resources would be avoided and/or minimized with implementation of Measures CR-1 and CR-2, provided in Section 2.7 of this IS/EA.

b) Less Than Significant Impact. As discussed in Section 2.19, Cumulative Impacts, in the IS/EA, several transportation projects may be under construction and operation at the same time as the Build Alternatives. However, the Build Alternatives

would result in improved operating conditions compared to the No Build Alternative and would not contribute to cumulative adverse effects. Therefore, the impacts of the Build Alternatives are not considered cumulatively considerable and are less than significant.

c) Less Than Significant Impact with Mitigation. As discussed in Sections 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.9, 2.10, 2.12, 2.13, and 2.14, in this IS/EA, the Build Alternatives would not result in environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly. Furthermore, the Build Alternatives would reduce traffic congestion and travel times on the SR-55 between I-5 and I-405. This would reduce traffic delay, thereby reducing travel time and improving the human environment.

However, as discussed in Section 2.5 in the IS/EA, the limited access at the McFadden Avenue on-ramp proposed under both Alternatives 3 and 4 would divert more traffic to the local arterials. The resulting increased delay and degradation in LOS would result in potentially significant impacts to the Northbound I-5 On-ramp/Newport Avenue intersection in 2020 and 2040. Measure T-3, which requires operational improvements at this intersection, would mitigate this impact of long-term traffic effects to a less than significant level.